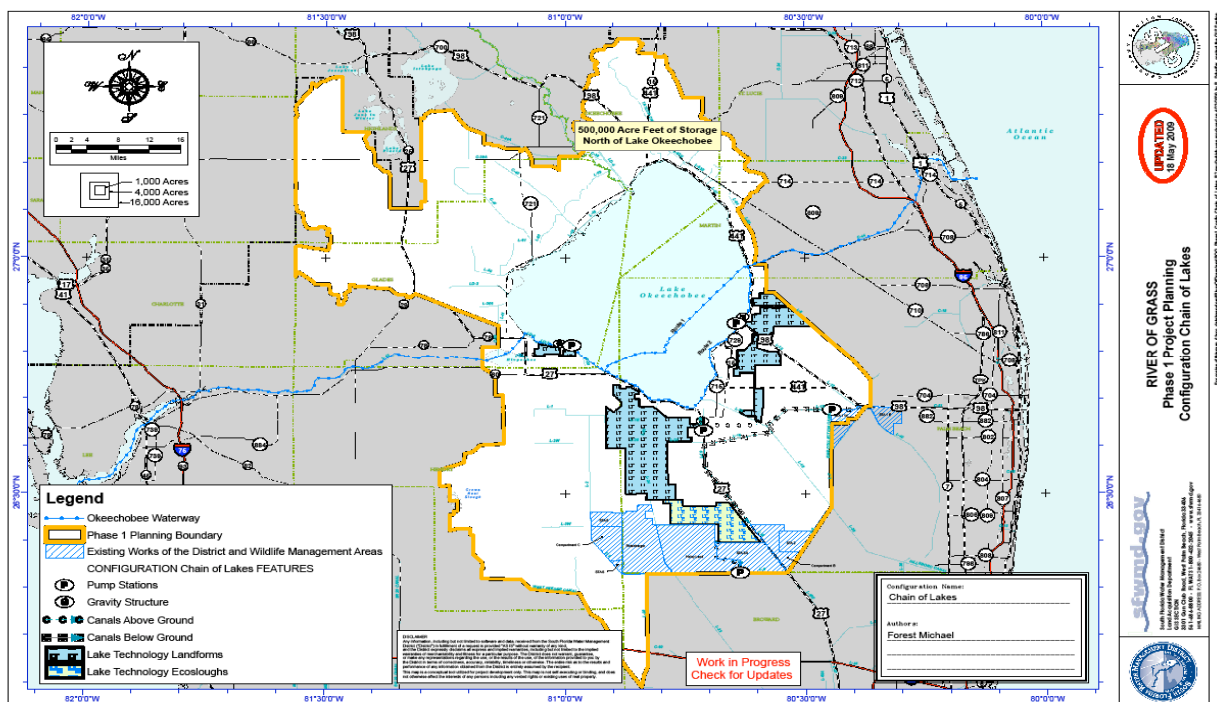


# Chain of Lakes (CL)

Forest Michael

*This configuration consists of above-ground water storage and treatment features that are intended to mimic a natural setting to a greater degree than Comprehensive Everglades Restoration Plan (CERP) standard reservoirs and stormwater treatment areas (STAs). Twelve horizontal to one vertical (12H:1V) vegetated side slopes are utilized to provide more natural aesthetics. The features are intended to be open for recreational uses such as fishing and hunting. An increase in the storage of water for Everglades deliveries and decrease in harmful discharges to the estuaries is expected, although no specific targets for these parameters are dictated by this configuration.*



## Major Components:

- North Deep Storage - 500,000 acre-feet
- South Deep Storage - 438,100 acre-feet
- South Shallow Storage - 48,520 acre-feet
- West Deep Storage - 18,000 acre-feet

**General Description of How Water Flows Through System/Operational Intent:** Ecoreservoir storage north of Lake Okeechobee would be utilized to store Lake Okeechobee watershed flows and then release them to the Lake as needed. Combination pump station/operable gates are proposed to take water from Lake Okeechobee and transfer it into the configuration components south of Lake Okeechobee. During high Lake Okeechobee level periods, the operable gates would allow water to gravity flow into the storage features and the pumps would not operate. During low Lake Okeechobee level periods, the pumps could be utilized to move water from the Lake into the storage features. All stored water eventually makes its way

to the Ecoslough, which is a shallow, vegetated, above-ground feature that serves as a water quality treatment component prior to the water being discharged via pump into the Everglades.

**Total Acreage Identified:**

- 92,000 acres north of Lake Okeechobee
- 123,560 acres south of Lake Okeechobee
- 3,960 acres west of Lake Okeechobee

Of the total acreage identified 26,142 acres is in public ownership and the remaining 193,378 would need to be acquired.

**Hydrologic Performance:** Achieved 94% (overall result of six (6) months total in Lake-triggered high discharges during the 41-year period of record) reduction in Lake-triggered high discharges to the Northern Estuaries. Received a 93% standard score for Everglades demand target delivered and a 91% standard score for dry season Everglades demand target delivered.

**Water Quality Performance:** This configuration requires an additional 10,100 to 37,200 acres of Stormwater Treatment Area depending on inflow phosphorous concentration from Lake Okeechobee and whether the Ecoslough and Ecoreservoir features are allowed to go dry. Based on the assumption that Ecosloughs can not reduce phosphorous concentrations below 25 parts per billion (ppb), discharges from Ecosloughs will need to be routed through an STA prior to discharge to the Everglades.

**Environmental / Ecological Advantages or Benefits:** The Ecoreservoirs and Ecosloughs are meant to provide additional habitat for birds, fish, reptiles and aquatic vegetation.

**Environmental / Ecological Impacts or Concerns:** With such a large acreage needed for the storage north of Lake Okeechobee, chances are high that existing wetlands and/or threatened or endangered species will be impacted by the configuration footprint. Due to the fact the configuration's components are intended to have full public recreational use, remediation costs will likely be higher than that of other potential configurations.

**Increased Spatial Extent of Shallow Storage/Treatment ( $\leq$  4 feet water depth):** 24,260 total acres. Results of relative landscape viability comparisons between the alternative configurations (based on maintenance of minimum depths) indicate that this configuration fell in the high range.

**Economic / Recreational Advantages or Benefits:** Outdoor recreation and its associated economic benefit is a cornerstone of this project configuration. The proposed features are intended to draw boaters, fishermen, hunters and birdwatchers as tourist attractions (ecotourism). It is expected that spending on these activities will boost the local economy.

**Economic / Recreational Impacts or Concerns:** Results of relative sugarcane production comparison between alternative configurations indicated that this configuration fell in the medium range.

**Major Infrastructure Impacts:** Power transmission lines, railroad lines and roadways will be impacted and will need to be replaced. Pump stations, control structures and additional canals will need to be constructed to offset impacts to local 298 drainage districts.

**Operation and Maintenance (O&M) Considerations:** Vegetation management, particularly removal of exotic species will be a major consideration for this configuration, given the high amount of vegetation that is proposed within footprints and along shoreline/embankments. This configuration contains a substantial amount of embankment (primarily > 9 feet height) that will have to be maintained. Use of pump assisted gravity flow structures is intended to minimize fuel costs and associated carbon release. O&M elements related to the recreational components of this configuration need to be taken into consideration.

**Uncertainty Concerns:** The frequency of drying out periods may be a concern for this configuration, given its emphasis on recreational use. In order to achieve maximum amount of benefit for Everglades deliveries and cutback in harmful estuary discharges, filling and draining the feature will be necessary and may conflict with the desire to maintain stable water levels for recreation. Uncertainty related to ability to completely drain features so that water can be made available to other portions of the system. High uncertainty related to water quality performance and the impacts of wetting/drying cycles.